Amendments to the Claims:

1–28. (canceled).

29. (currently amended) An electrical tomographic method for detecting abnormalities in bodily matter comprising the steps of:

generating electrical signals having a frequency greater than 4 MHZ ~~at a plurality of frequencies~~;

applying the electrical signals to the bodily matter using an electrode arrangement;

detecting electrical impedance properties of the bodily matter; and,

using data processing means correlating the detected electrical impedance properties with the presence or absence of abnormalities in the bodily matter using a fractal model of tissue impedance.

30. (canceled) The method of claim 29 wherein the electrical signals applied to the bodily matter have a frequency greater than 1 MHZ.

31. (canceled) The method of claim 29 wherein the electrical signals applied to the bodily matter have a frequency greater than 4 MHZ.

32. (previously presented) The method according to Claim 29, wherein the detected electrical impedance properties are selected from the group consisting of Zi, Zx, Zx_{com}, Zm, Zm_{com}, Cm and Cm_{com}.

33. (previously presented) The method according to Claim 29, wherein the data processing means correlates detected electrical impedance properties selected from the group consisting of Zi_{com}, Zx_{com} to Zi_{com} ratio, Zx_{com}, Zm_{com}, Cm_{com}, Zx_{com} / Zm_{com}, Zxcom / Cm_{com}, and Zm_{com}, Zi_{com}.

34. (previously presented) The method according to Claim 29, wherein the data processing means correlates changes and/or large variations of intracellular impedance Zi_{com} with the presence of dyskaryosis.

35. (previously presented) The method according to Claim 29, wherein the data processing means correlates abnormal Zi_{com}, Zx_{com} to Zi_{com} ratio with abnormal nuclear-to-cytoplasmic ratio (NCR).

36. (previously presented) The method according to Claim 29, wherein the data processing means correlates abnormal Zx_{com} with abnormal inter-cellular cohesion.

37. (previously presented) The method according to Claim 29, wherein the data processing means correlates abnormal Zm_{com}, Cm_{com}, Zx_{com} / Zm_{com}, Zm_{com} / Cm_{com}, Zm_{com} Zi_{com} with abnormal membrane morphology.

38. (previously presented) The method according to Claim 29, wherein the data processing means correlates detected impedance properties selected from the group consisting of:

i) Zi_{com};

ii) Zx_{com};

iii) Zm_{com}, Cm_{com}; and,

iv) ratio Zx_{com} / Zi_{com}; Zx_{com} / Zm_{com}; Zx_{com} / Cm_{com};

with the presence of non-infiltrate, early-infiltrate or infiltrate stage cancer.

39. (previously presented) The method of Claim 29, wherein the data processing means references the detected electrical impedance properties of the bodily matter to the detected electrical impedance of other bodily matter.

40. (currently amended) The method according to Claim [[37]] 39, being adapted to detect a breast carcinoma, wherein the detected impedance properties are of breast tissue and are referenced to detected electrical impedance properties of fatty tissue in the breast.

41. (previously presented) The method according to Claim 29, wherein the data processing means is adapted to compare the detected electrical impedance properties with a database of impedance properties corresponding to bodily matter of known composition.

42. (previously presented) The method of Claim 29, adapted to detect a carcinoma.

43. (previously presented) The method according to Claim 29, adapted to detect a breast carcinoma.

44. (previously presented) The method according to Claim 29, adapted to detect at least one of the group consisting of Stage 3, Stage 2 and Stage 1 carcinomas.

45. (previously presented) The method according to Claim 29, wherein the electrode arrangement is disposed in a woman's brassiere.

46. (canceled) An electrical tomographic method for detecting abnormalities in bodily matter comprising the steps of:

generating electrical signals at a frequency greater than 1 MHz;

applying the electrical signals to the bodily matter using an electrode arrangement;

detecting electrical impedance properties of the bodily matter; and,

correlating the detected electrical impedance properties with the presence or absence of abnormalities in the bodily matter using a fractal model of tissue impedance as shown in Figures 3 and 4.

47. (withdrawn) An electrical impedance tomography apparatus adapted to detect abnormalities in bodily matter comprising:

an electrical signal generating means for generating electrical signals at a plurality of frequencies;

an electrode arrangement for applying the electrical signals to the bodily matter and detecting electrical impedance properties of the bodily matter; and,

a data processing means for correlating the detected electrical impedance properties with the presence or absence of abnormalities in the bodily matter using a fractal model of tissue impedance.

48. (withdrawn) The apparatus of claim 47 wherein the electrical signals applied to the bodily matter have a frequency greater than 1 MHZ.

49. (withdrawn) The apparatus of claim 47 wherein the electrical signals applied to the bodily matter have a frequency greater than 4 MHZ.

50. (withdrawn) An electrical impedance tomography apparatus adapted to detect carcinomas in bodily matter comprising:

an electrical signal generating means for generating electrical signals at a frequency greater than 1 MHZ;

an electrode arrangement for applying the electrical signals to the bodily matter and detecting electrical impedance properties of the bodily matter; and,

a data processing means for correlating the detected electrical impedance properties with the presence or absence of carcinomas in the bodily matter using a fractal model of tissue impedance as shown in Figures 3 and 4.

51. (new) The method according to Claim 29, wherein the fractal model of tissue comprises a Zcom structure having a bridge configuration comprising first and second Zcom units in series with one another, third and fourth Zcom units in series with one another and in parallel with the first and second Zcom units, and a fifth Zcom unit bridging between the first, second, third and fourth Zcom units.

52. (new) The method according to Claim 51, wherein each Zcom unit further comprises at least one additional level of Zcom structure, each Zcom unit in the Zcom structure or the last of the Zcom structures comprising a Zcell structure comprising first, second and third Zcells, the first and second Zcells being in series, and the first and second Zcells being in parallel with the third Zcell, each Zcell optionally comprising at least one level of Zcell structure, each Zcell in the Zcell structure or the last of the Zcell structures comprising a single cell equivalent circuit comprising:

(i) a first membrane impedance circuit comprising cell membrane capacitance in series with membrane resistance, the cell membrane capacitance and membrane resistance being in parallel with cross-membrane resistance;

(ii) a second intracellular impedance circuit comprising intracellular capacitance in series with intracellular resistance, the intracellular capacitance and intracellular resistance being in parallel with intracellular cross-resistance; and

(iii) a third extracellular impedance circuit comprising extracellular capacitance in series with extracellular resistance, the extracellular capacitance and extracellular resistance being in parallel with extracellular cross-resistance;

the first membrane impedance circuit and the second intracellular impedance circuit being in series, and the first membrane impedance circuit and the second intracellular impedance circuit being in parallel with the third extracellular impedance circuit.

53. (new) An electrical tomographic method for detecting abnormalities in bodily matter comprising the steps of:

generating electrical signals at a plurality of frequencies;

using an electrode arrangement, applying the electrical signals to the bodily matter and detecting electrical impedance properties of the bodily matter; and

using data processing means correlating the detected electrical impedance properties with a database of impedance properties corresponding to bodily matter of known composition in order to determine the presence or absence of abnormalities in the bodily matter;

wherein electrical signals of a frequency greater than 1 MHz are applied to the bodily matter; and characterised in that the data processing means correlates the detected electrical impedance properties with the presence or absence of abnormalities using a fractal model of tissue impedance which can be described as comprising a Zcom structure having a bridge configuration comprising first and second Zcom units in series with one another, third and fourth Zcom units in series with one another and in parallel with the first and second Zcom units, and a fifth Zcom unit bridging between the first, second, third and fourth Zcom units, each Zcom unit optionally comprising at least one additional level of Zcom structure, each Zcom unit in the Zcom structure or the last of the Zcom structures comprising a Zcell structure comprising first, second and third Zcells, the first and second Zcells being in series, and the first and second Zcells being in parallel with the third Zcell, each Zcell optionally comprising at least one level of Zcell structure, each Zcell in the Zcell structure or the last of the Zcell structures comprising a single cell equivalent circuit which can be described as comprising:

(i) a first membrane impedance circuit comprising cell membrane capacitance in series with membrane resistance, the cell membrane capacitance and membrane resistance being in parallel with cross membrane resistance;

(ii) a second intracellular impedance circuit comprising intracellular capacitance in series with intracellular resistance, the intracellular capacitance and

intracellular resistance being in parallel with intracellular cross-resistance; and

(iii) a third extracellular impedance circuit comprising extracellular capacitance in series with extracellular resistance, the extracellular capacitance and extracellular resistance being in parallel with extracellular cross-resistance;

the first membrane impedance circuit and the second intracellular impedance circuit being in series, and the first membrane impedance circuit and the second intracellular impedance circuit being in parallel with the third extracellular impedance circuit.